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AND EMPIRICAL TEST

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by

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Abstract

The authors propose and test a theoretical model of household coupon usage with panel data. The model integrates past literature in a conceptual framework to show that coupon usage behavior is influenced by the expected benefits from redeeming coupons, the cost of using coupons, and the individual difference variables. The results suggest that the extent of coupon usage is influenced by the expected benefits from coupons, cost of using them, their availability to the household, and brand loyalty. Financial pressure and product innovativeness influence expected benefits from coupons.

INTRODUCTION

Since the introduction of a one cent coupon for Grape Nut Cereal in 1895, the use of coupons both by sellers and consumers has experienced phenomenal growth. In 1988, almost 222 billion coupons were distributed and 7 billion were redeemed by over 97% of American households (Manufacturer Coupon Control Center, 1989; Teinowitz, 1988). This represents a sharp increase in coupon usage during the past few years.

Considerable research has been undertaken in marketing to understand household coupon usage behavior. Some studies (Babakus, Tat, and Cunningham, 1988; Bawa and Shoemaker, 1987; Montgomery, 1971; Webster, 1965) have examined household characteristics for the purpose of developing a profile of deal users. However, after an extensive review of eighteen empirical and theoretical studies, Blattberg and Neslin (1990) concluded that "demographic and behavioral characteristics yield a much less clear portrait of the deal prone consumer than do other (psychographic) variables" (p. 73).

A possible explanation for inconsistencies in the literature is the absence of a well-defined theory. Towards this end, Blattberg et al. (1978) proposed the first theoretical model for identifying deal-prone consumers. They postulated that, in addition to the product's price, a household's purchasing decisions are based on such factors as its transaction, holding, and stock-out costs, and that the households attempt to minimize their total costs to make an optimal decision. They related household characteristics to these costs to identify individuals most likely to be deal prone. For example, a household owning a house was expected to be more deal-prone because of lower inventory holding costs. While their empirical analysis supported most of the hypothesized relationships, there were many inconsistencies in their results when compared across various product categories.

A limitation of past studies is the absence of a consistent measure of deal-proneness (Henderson, 1983). The deal measures used frequently aggregate different types of deals offered in the market into one broad category. However, marketing studies have shown that household response varies depending upon the type of deal offered. For example, while some households may

react favorably to in-store price specials due to shopping convenience, they may not use coupons because of the effort required to collect them (Bawa and Shoemaker, 1987). Furthermore, Dodson, Tybout, and Sternthal (1978) have found that market response to deals is tempered by individual characteristics such as brand loyalty. To examine the influence of various behavioral and attitudinal variables on household coupon usage behavior, it would, therefore, be more appropriate to focus on coupons alone and not all types of deals.

Among the studies which have limited their focus exclusively on coupon usage, Ward and Davis (1978) found that coupons increase consumption due to monetary savings as well as increased awareness of the couponed product. They reported that only age of the household influenced coupon usage behavior, and even this influence was mediated by product price. These findings were later confirmed by Thompson and Tat (1981) and Bearden, Teel and Williams (1981) who also observed that coupon users differ from non-users in terms of age.

More recent studies on coupon usage have provided either cost based or motivational explanations of coupon usage. Cost based explanations suggest that households with higher cost of time tend to use fewer coupons than those with lower cost of time. For example, Narasimhan (1984) hypothesized that manufacturers use coupons to price discriminate against consumers whose opportunity cost of time is high. Similarly, Bawa and Shoemaker (1987) have proposed a cost-benefit model to show that due to the cost of time one needs to spend in order to collect coupons, a household is more likely to use coupons in multiple product categories. They also found that household income, husband's education, brand loyalty, store loyalty, and geographical location significantly influence household coupon proneness.

There is theoretical and empirical evidence which suggests that coupons may be used to derive both monetary and psychological benefits. This implies that models based upon cost alone may not adequately explain household coupon usage behavior. For example, Schindler (1984) theorized that coupons may be more effective than simple price reductions at the point-of-purchase because coupons make its users feel smarter than non-users. Shimp and Kavas (1984) have also postulated that feeling of being an efficient shopper represents another dimension of benefits users of coupons

derive from their redemption.

This literature suggests that although considerable evidence exists about coupon usage, no attempt has been made to integrate all relevant variables for explaining coupon usage behavior. Such a framework must recognize that benefits and costs associated with coupon usage are multi-dimensional. For example, consumers expect monetary as well as psychological benefits from coupons. Any such integrated model should also incorporate the influence of situational and individual differences variables which have been identified in deal usage studies.

A THEORETICAL MODEL

A conceptual model of household coupon usage behavior is presented in Figure 1. Circles in the figure represent unobserved constructs and arrows show the direction of hypothesized relationship between the various constructs. We propose three groups of constructs that affect the extent of coupon usage. The first group represents expected benefits from coupons; the second represents costs associated with their use. The third group includes a set of situational and individual difference variables which influence coupon usage either directly or through benefits. Each construct and its relationship with the other constructs in the model is described in this section, beginning with the dependent construct - extent of coupon usage.

Extent of Coupon Usage:

The extent of coupon usage for a bundle of groceries is the central construct in the proposed model. Several researchers have shown that examination of the entire grocery basket provides a better understanding of shoppers' purchasing behavior because they exhibit different purchasing patterns across different product categories (eg. Blattberg and Sen, 1976). Past research suggests that developing profiles of deal-prone consumers based on deal usage in a single product category (e.g. Webster, 1965; Narasimhan, 1984) may produce unreliable results. A household identified as deal-prone in these studies may be using deals only in the products examined by the authors. For example, Carman (1970) found that his measure of deal-proneness yielded conflicting results for different product categories.

Expected Benefits:

Households derive positive benefits from coupon usage resulting in higher redemption rates.

The specific benefits derived include the following:

Monetary Savings: The coupon is a device through which sellers provide monetary savings to the buyers of their brands. Given that coupons were introduced to provide financial savings to the shoppers, it is not surprising that several authors (e.g. Thompson and Tat, 1981; Shimp and Kavas, 1984) have stated that households use coupons because of their monetary worth. In fact, in a study conducted by Progressive Grocer in 1978, 83% of the respondents mentioned that using coupons was "important" to shop economically.

Risk Reduction: Since most grocery products are experience goods, judgments about their quality are based on shopper's own experiences. Dunn, Murphy and Skelly (1986) have reported that because of the unknown quality of new nationally advertised grocery products, most consumers perceive substantial financial risk when considering whether to buy them. This may be the reason why sellers offer deals and coupons to induce trial of new brands and products (Dodson et al., 1978; Scott, 1976) by reducing the financial risk of trial (Shimp and Bearden, 1980).

Hence, when coupons are used for trying a new product, in addition to providing a financial benefit, they also reduce the potential loss to the shopper in the event the product is found unsatisfactory. For example, if consumers have a 50 cent coupon for an unfamiliar product (or brand) with a face value of \$2.00, they may decide to use the coupon because of two distinct reasons: they may see \$1.50 as a bargain price for the product, and/or they may feel that if the product turns out to be bad, they would lose only \$1.50 and not \$2.00. Schindler (1988) suggests that the coupon in this example would reduce the "negative reinforcement" of a product's cost by 50 cents.

Psychological Benefit: Several researchers have reported that households derive a psychological benefit from using coupons. In their survey of grocery shoppers, Shimp and Kavas (1984) found that "(the) feeling of being a thrifty and smart shopper as a result of

using coupons" was a salient reason for coupon use. Schindler (1984) also observed in an experiment that when a shopper had to take an action to get a discount (e.g. coupons) there was more sales stimulation than when such an action was not necessary. Similarly, Babakus et al. (1988) found that "the good feelings that result from having done something to obtain the discount" was an important motivational element in coupon usage. These findings lend support to the notion that the psychological benefit derived by consumers from coupons may be one of the factors why coupons are more effective than simple price reductions. There are several plausible explanations for consumers' psychological benefits from coupons.

First, as compared to a simple price reduction in which households do not have to make an effort to get the savings, coupons require some preparation before they can be used. It is perhaps more fulfilling to shoppers to get rewarded for their efforts rather than get a price reduction without having to do anything for it (Schindler, 1984). One important thing to note here is that the simple price reduction above refers to in-store specials for which household did not gather any information before arrival at the store. For the advertised price specials, consumers may experience themselves as undertaking an active search to find the brands advertised on sale and therefore perceive themselves as responsible for receiving the discount.

The second explanation concerns consumers' feelings of pride. Women remain the primary grocery shoppers in most households and are said to be proud of their caretaker roles (Roberts and Wortzel, 1979). If coupon usage is perceived by women as a useful means of better fulfilling their caretaker role, coupons may be redeemed by them to boost their pride.

Finally, some coupon users may feel smarter when they realize that non-coupon users have to pay more than them for the same products (Shimp and Kavas, 1984). On the other hand, in case of a simple price reduction which is available to everyone buying the discounted product, consumers may not get this feeling of being smart shoppers.

Fun Benefit: Henderson (1983, p. 2-28) states that when price promotions are used extensively in the market place, response to money-saving claims may become ingrained in the shopper's mind. Such behavior may constitute an enlargement of the grocery purchasing role,

thus providing variety and entertainment to an otherwise mundane task.

Information Value: Several authors have suggested that sales promotions provide information to shoppers (e.g. Schindler, 1988). Ward and Davis (1978) illustrate that coupons serve as a tangible reminder of the availability of a particular product in the market place. Schindler (1984) has observed that coupons influence households' decision process through information about the existence of new brands. In a recent study, Bawa and Shoemaker (1989) have reported that coupon promotions have an "exposure effect" on shoppers.

Manufacturers Coupon Control Center (1989) reports that in 1988, 84% of grocery coupons were distributed through Free Standing Inserts (FSI's) in the Sunday newspapers. Due to the information overload caused by excess amount of information presented, a coupon may directly influence the process of selective attention and increase the probability that the information provided by the advertisement is attended to (Ortmeyer, 1986). This is further substantiated by Bowman (1980, p.66-68) who found that print advertisements which contained a coupon had higher Starch readership scores than the identical advertisements without coupons. While coupons themselves do not provide information in this particular case, consumers obtain information from the advertisement because of the coupons. Coupons may also provide direct information either by serving as reminders (Ward and Davis, 1978) or because they induce product trial. On the basis of the above discussion, we can hypothesize that:

H1: Perceived benefits from coupons will have positive influence on the extent of coupon usage.

Costs of Coupon Usage:

Coupon use imposes certain implicit and explicit costs on the household. A consumer who wants to redeem coupons has to spend a considerable amount of time and effort in collection and redemption. Earlier studies using a cost-benefit framework to explain consumers' coupon usage unanimously agree that households with high usage costs are less likely to use them. We have postulated two costs in our model:

Opportunity Cost of Time: Coupon usage imposes a time penalty on users. Households have a limited amount of free time at their disposal. Its allocation for a particular activity precludes alternative uses. Hence, the household must weigh the opportunity cost of time when deciding how to distribute time among a set of competing time consuming activities. Blattberg et al. (1978) have shown that the employment of wife and presence of young children have negative impact on household ability to take advantage of deals since this later activity consumes time. In another study, Narasimhan (1984) used several demographic variables as proxies of time cost to examine its impact on coupon usage. Based on his results he concluded that "consumers for whom it is costly to use coupons are less likely to use them than others". More recently, Bawa and Shoemaker (1987) have shown that coupon prone households indeed differ from non-coupon-prone households with respect to some proxies of cost of time. It is, therefore, hypothesized that:

H2(a): Opportunity cost of time will have a negative influence on the extent of coupon usage.

Effort Cost: Coupons require substantial planning on the part of a household. In addition to clipping, sorting, and organizing coupons, a shopper has to remember to take them to the store. For an occasional user, the effort required to redeem one or two coupons may not be much. However, if one were to seriously consider using coupons on a continuing basis, the effort cost could become quite substantial. Thus, we can hypothesize:

H2(b): Perceived effort cost of using coupons will have negative influence on coupon usage.

Situational and Individual Differences Variables:

One essential environmental factor that deserves attention is the coupon usage situation. For example, a financially strained household may choose to redeem coupons even when redemption costs exceed benefits. Alternatively, another household may choose not to redeem a coupon even when benefits far exceed costs because the brand being offered may not be its favorite brand. We have posited seven situational and individual differences variables that are likely to exert direct or

indirect influence on coupon redemption.

Financial Pressure: Households experiencing greater financial pressure in meeting their family budget are likely to see greater financial benefit from the use of coupons. Households may use coupons to cut cost, fight against inflation, stretch the weekly budget, and buy products they would otherwise not be able to afford (Strang, 1981). This financial pressure is not synonymous with the family income used by previous researchers (e.g. Blattberg et al., 1978; Narasimhan, 1984; Bawa and Shoemaker, 1987) as a proxy of opportunity cost of time. It reflects constraints on household budgets and recognizes specific decision situations of each consumer. Thus, two households with equal incomes but unequal family size are unlikely to experience similar financial pressure. The second family devoting a larger proportion of family income on grocery consumption will be under greater pressure and hence would see greater financial benefit from coupon usage. Hence, it is hypothesized that:

H3: Financial pressure will have a positive influence on the expected benefits from coupons.

Product Innovativeness: Cents-off coupons are used to introduce new or improved products in the market (Sims, 1977). In a study conducted by United Marketing Services (Hume, 1990), 70% households indicated that they bought a new product they had not tried simply because of a coupon offer. Coupons reduce the financial risk associated with product adoption since the manufacturers subsidize trial through immediate cash discount. The benefit from such a subsidy is more likely to be perceived by consumers who are predisposed to buying new products. Marketing literature abounds with studies on consumer innovativeness (Engel, Blackwell, and Miniard, 1990). Particularly relevant is the study by Arndt (1968) which supports the notion of general innovativeness among consumers with respect to grocery products. It can, therefore, be hypothesized that:

H4: Product innovativeness will have a positive effect on the expected benefits from coupons.

Variety-Seeking: While innovativeness refers to the propensity to try new and unfamiliar products, variety-seeking refers to purchase situations in which individuals vary their choices

among previously sampled brands, that is, they alternate their purchases among familiar alternatives (Givon, 1984; Hirschman, 1980; McAlister and Pessemier, 1982; Raju, 1980).

McAlister (1986) has reported that deal offers of mature brands do not change consumers' long-range preferences. Her findings show that the increases in sales during promotions are caused either due to stockpiling or switching. However, a vast majority of coupons usually do not have any expiration dates, suggesting that a key objective of marketers is to encourage brand switching. It seems that at any given time, there are enough consumers seeking variety due to satiation, and the sellers offer coupons to attract this particular segment. Consequently, we suggest that:

H5: Variety-seeking will have positive influence on the expected benefits from coupons.

Brand Loyalty: Several scholars in marketing have investigated the relationship between brand loyalty and deal proneness in a variety of domains (e.g. Massy and Frank, 1965; Montgomery, 1971; Bawa and Shoemaker, 1987; and Jain, Pinson, and Malhotra, 1987). This research has typically observed a negative relationship between brand loyalty and deal proneness.

Jacoby and Chestnut (1978) suggest that brand loyalty has at least two primary dimensions - brand loyal behavior and brand loyal attitude. The first manifests itself through the repeated purchase of specific brand while the latter results in underlying predispositions to behave in a "selective fashion". Thus, when confronted with cents-off coupons for competing brands, a brand loyal consumer is likely to disregard them. Occasionally a brand loyal consumer may indeed find coupons for preferred brands. In such situations, the likelihood that the coupon will be redeemed is extremely high (Bawa and Shoemaker, 1987b). However, the chances are low that a loyal consumer will find many relevant coupons. Since a vast majority of coupons are issued to promote adoption through trial or switching (Sims, 1977), yield from a search of relevant coupons is likely to be much less for a loyal consumer than a less brand loyal consumer. It is therefore expected that,

H6: Brand loyalty will have negative influence on the extent of coupon usage.

Coupon Usage Opportunity: Coupon redemption is partially influenced by household consumption patterns. Consider two households: in household one, ready to eat cereal is consumed every day while in the second household it is used infrequently. Consequently, the first household will have much greater opportunity to redeem coupons for cereals than the second household. This, when combined with unequal distribution of coupons by manufacturers of different product categories (e.g. higher distribution of coupons by cereal manufacturers than by soft-drink bottlers), will significantly alter the coupon usage opportunities of individual households. Households which are heavy users of frequently couponed products will have greater opportunity to find coupons resulting in higher usage rates. Consequently, it is hypothesized that:

H7: Coupon usage opportunity will have a positive effect on the extent of coupon usage.

Coupon Availability: Bawa and Shoemaker (1987) have reported unequal distribution of coupons in the market place. Every household does not have equal opportunity of receiving coupons. This is determined by the supplier. Households less likely to receive coupons in general are also less likely to redeem them. Thus, past literature suggests a positive relationship between coupon availability and the extent of coupon usage.

While Bawa and Shoemaker had included the residence of the household to control for the difference between rural and urban households, our observations suggest that even within a metropolitan area coupons are not distributed equally across all neighborhoods. This is true not only for direct mail coupons but also of the newspaper inserts. Hence, it is hypothesized that:

H8: Coupon availability will have a positive effect on the extent of coupon usage.

Shopping Efficiency: Cost of coupon usage is only one of the deterrents in their redemptions. The importance of individual differences in shopping efficiency, and its effect on household deal-proneness is well recognized (Narasimhan, 1984; Levedhal, 1986). A household that clips, sorts, and organizes coupons more efficiently than other households will have more coupons to use. Empirical evidence also shows that efficiency has a positive

influence on coupon usage behavior (Bawa and Shoemaker, 1987). Therefore, it is hypothesized that:

H9: Shopping efficiency will have positive effect on the extent of coupon usage.

In summary, we have proposed a theoretical model of household coupon usage behavior based on cost-benefit framework. This review reveals a body of literature examining one or more of the basic linkages in household coupon usage behavior. These linkages have been identified and presented as separate research hypotheses. We next describe the methodology employed to empirically test the model in its entirety.

METHODOLOGY

Data for the empirical test of the model were collected by establishing a panel of households through the cooperation of a supermarket chain in the north-east. Six different locations of the chain were selected by matching the demographic profile of the shoppers with that of the population within a radius of two miles from each location.

Products:

We wanted to capture the weekly changes in household coupon usage behavior. However, at the outset it became clear that given our limited resources, it would be prohibitive to capture information about every grocery item bought by a household. Instead, it was decided to limit data collection to thirty representative products. These products were systematically selected to ensure that they adequately represent a typical grocery basket and couponing activity in the market place. The methodology adopted for product selection is described in the Appendix. The particular products retained for the study are shown in Table 1.

Scale Development:

A four step procedure was employed to ensure development of reliable and valid scales for the latent constructs of the proposed model. First, in-depth personal interviews were conducted with a convenience sample of ten female shoppers who regularly bought groceries for their households and claimed to be frequent grocery coupon users. The purpose of the interviews was to obtain

information pertaining to the domains of the constructs incorporated in the proposed model. Respondents' expressions in the form of statements about the various constructs proposed in the model were carefully recorded for creating items to be later included in the questionnaire.

Next, ten judges were given the construct definitions developed through the in-depth interviews. Each judge was instructed to create five items for each construct and then show the list of items along with the construct definitions to at least five households. These households were asked to read the construct definition and identify the items which they thought would measure the particular construct. Care was taken to randomly rotate the positions of each item on the list. Any item not correctly identified by at least four out of the five households interviewed by a judge was dropped from further consideration. A master list was then prepared with all the retained items. Since this list contained too many items for each construct, items judged to be unclear or redundant were removed. This process yielded about eight items for each construct.

Third, a pilot study was conducted to assess the reliabilities of the scales based upon these items. Through the cooperation of a grocery chain in a northeastern metropolitan area, shoppers were approached in one of the grocery stores to participate in a study about grocery shopping. A total of 570 questionnaires were distributed from which 376 were returned by the cut-off date. The scales were tested on data from 279 cases for whom complete information was available. High Cronbach Alpha values for most scales tested in this pilot showed that they were reliable. Different validity tests further confirmed that the scales were indeed valid.

Finally, a second pilot study was conducted to independently test the reliability and validity of five scales measuring the benefits shoppers expect to derive from coupons. A single sheet containing 24 attitudinal statements was inserted in a questionnaire that was being distributed to 200 shoppers for another study regarding grocery shopping. Factor analysis of these twenty-four items revealed five dimensions of expected benefits. Each dimension was found to have high reliability scores.

Development of Research Instruments:

We designed purchase diaries to record a household's weekly purchases and a questionnaire to

collect the attitudinal data. The diary listed the thirty products divided into three product groups: grocery edibles, grocery non-edibles, and frozen/dairy products. For each product, the participants were to record name of the brand bought, whether or not they always bought the purchased brand, price paid, value of the coupon (if used) or discount (if bought on sale), and name of the store where the product was purchased. In the questionnaire, the panelists were to rate a set of attitudinal statements designed to measure the various constructs on a Likert-type scale. They also provided information about their grocery shopping behavior, cost of time, media consumption habits, frequency of purchase of the thirty selected products, and socio-demographic characteristics. The diary and questionnaire were pre-tested using a convenience sample of fifteen households. The pre-test resulted in minor modifications in the language of some of the questions to remove task ambiguity.

Data Collection:

At selected store sites during different times of the day and on different days of the week, shoppers were randomly intercepted. They were screened to retain only those who spent at least \$40 per week on groceries and who were the principal shopper in the household. Each shopper was informed of the purpose of the study, the length of the project, and shown the contents of the data collection package including diaries and questionnaire. Those willing to participate were instructed on how to answer the questionnaire and complete the diaries. Each participant was given a \$2 coupon redeemable at any store of the sponsoring chain and advised of a cash giveaway to those returning the diaries and questionnaire in a timely manner. A total of 1,071 households were recruited out of which 526 questionnaires representing 49.1% of the recruited "panel" were returned. We received 2,268 diaries with at least one recorded transaction. The analysis presented here is based upon data from 352 "panelists" from whom completed questionnaires and diaries for four or more weeks with at least one entry were received.

Method of Analysis:

The empirical test of the proposed model was performed in two stages. In the first stage, scales of various latent constructs were developed using Principal Components Factor Analysis and

Reliability Statistics such as Cronbach Alpha. In the second stage, the model proposed in Figure 1 was tested in its entirety using LISREL. The proposed model is a simultaneous system of equations having latent constructs and multiple indicators, hence LISREL is the preferred method of analysis. LISREL does not constrain the relationships between the error components, and it permits errors of measurement to exist (Bentler, 1980; Joreskog and Sorbom, 1986).

MODEL OPERATIONALIZATION

Measures for coupon usage and loyalty behaviors were developed using purchase data for the thirty products provided by the panel members in their weekly diaries. A measure for coupon usage opportunity was developed using information independently collected from the coupon flyers inserted in the sampled metropolis' only newspaper. The remaining constructs were measured using information gathered in the questionnaire. A sample item used to operationalize each construct in the proposed model and Cronbach α are presented in Table 2. A brief discussion of measures employed for each construct follows:

Extent of Coupon Usage (CUSAGE): (η_1) The extent of coupon usage was measured by: (a) average dollar amount saved across the thirty products during the six weeks, (b) the average number of coupons redeemed, (c) the average amount saved from coupons expressed as a percentage of the shopper's weekly grocery expenditure, and (d) the proportion of transactions made with coupons. The coefficient of reliability for the scale was 0.81.

Expected Benefits from Coupon Usage (BENEFIT): (η_2) The five benefits which households can expect to derive from coupon usage are: monetary savings, risk reduction, psychological benefits, fun benefit, and information value. Each of these benefits was measured using multiple attitudinal statements on seven-point Likert type scale. Results for each dimension of the expected benefits are briefly discussed below.

Monetary Savings (FINBEN): Consumers define monetary savings in grocery expenditures in two ways: reduction in the total expenditure and the ability to buy more for

the same amount of money. The specific statements used captured both aspects of monetary savings. The scale's reliability coefficient was 0.78.

Risk Reduction (RISKBEN): The benefit of risk reduction through the use of coupons was operationalized through statements such as "coupons reduce the risk of trying unfamiliar products". The scale was based on five statements and its coefficient of reliability was 0.87.

Psychological Benefit (PSYBEN): The psychological benefits from coupon redemption included in the scale measured the feeling of reward (e.g. "Redeeming a coupon makes me feel that I have earned that extra saving"), sense of pride (e.g. "I think coupon use is part of being a good caretaker of the family"), the act of being a smart shopper (e.g. "Smart shoppers use coupons") and the overall satisfaction from using coupons (e.g. "I feel good when I use coupons"). The scale was based on 11 statements and its coefficient of reliability was 0.96.

Fun Benefit (FUNBEN): The perceived fun households derive from coupon use was measured through responses to statements such as "Without coupons shopping to me would be a dull exercise". A total of four statements were used and the scale's coefficient of reliability was 0.88.

Information Value (INFOBEN): The final benefit derived from the redemption of coupons by households is the information value of coupons. It was measured by four items such as "Coupons give me information about products I would not have received otherwise". The coefficient of reliability for the scale was 0.80.

A Factor analysis of the summated scores of the above five dimensions of the expected benefits yielded a single factor solution explaining 67.7% of the variance. The factor loadings for each dimension were: FINBEN (0.827), RISKBEN (0.818), PSYBEN (0.890), FUNBEN (0.825), INFOBEN (0.748). The summated scores for each scale were used in the LISREL model.

Opportunity Cost of Time (TIMECOST): (ξ_1) Income or wage rate is frequently used to measure the opportunity cost of time. However, measures such as these need not necessarily represent the true opportunity cost of time. For example, a retired household has a greater amount of total time at its disposal than one which must work to achieve the same level of income. The

first household will simply have more time available at its disposal and hence may assign lower value to the marginal cost of time than the second household. Furthermore, due to their lifestyles, two households with similar income level, education and occupational status may have a different opportunity cost of time. A socially active household will probably assign a higher value to the leisure time than a less active household. Thus, it seems unreasonable to assign the same value to one's "free" time as work time. Two items were used to measure this construct and its coefficient of reliability was 0.73.

Effort Cost (EFFCOST): (ξ_2) Another dimension of costs is the cost of perceived effort involved in using coupons. This cost is not a negative predisposition toward coupon usage, i.e. it is different than "negative benefits" associated with coupon usage. The focus here is to assess whether or not a consumer has a psychological barrier toward using coupons. Some consumers may see benefits in coupons and yet think that their usage requires too much effort. The six items used to operationalize this construct included statements such as "I think that coupons require too much work". Cronbach α for this construct was 0.87.

Financial Pressure (FINPRES): (ξ_3) Financial pressure in the present context is not synonymous with the family income; rather it reflects perceived constraints on the household budget and recognizes specific decision situations of each household. Seven items such as "No matter how we budget, we always run short at the end of the week" were used to measure financial pressure. The reliability coefficient for the scale was 0.90.

Product Innovativeness (INNOVAT): (ξ_4) Subjects innovativeness was measured through their predisposition to try new products and associated feelings of excitement with their usage. Six statements such as "I find it exciting to try newly introduced grocery products" were used to measure this construct and reliability coefficient was 0.87.

Variety-Seeking (VARSEEK): (ξ_5) When individuals vary their choices by alternating their purchases among familiar alternatives, it is referred to as variety-seeking. Four items were used to form this scale. Cronbach α for this construct was 0.86.

Raju (1980) has suggested that there is no real difference between variety-seeking and innovativeness. On the other hand, Givon (1984) and McAlister and Pessemier (1982) suggest that they are two separate constructs. To empirically validate this controversy, all items pertaining to product innovativeness and variety seeking were factor analyzed together. Two distinct factors with no high overlapping factor loadings were obtained. Hence, the two were retained as independent factors.

Brand Loyalty (LOYAL): (ξ_6) For each recorded transaction in the weekly diaries, panel members were requested to indicate whether the brand bought was their "usual" brand. The proportion of times a household bought the usual brand during the study period was used as a proxy for brand loyalty.

Coupon Usage Opportunity (USEOPP): (ξ_7) This construct refers to the differences in household coupon usage opportunity due to their consumption patterns of various grocery products. The following three steps were taken to create a single item measure in which the coupon supply data were combined with the household consumption patterns.

Step 1: Coupon supply data were collected from 142 inserts supplied through the local newspaper over a period of twelve weeks prior to the study. Since it was the only newspaper in the city, it accounted for almost 80% of the total coupons received by residents. From these data, the weekly probability (PW) of finding a coupon for a product j (where $j = 1, \dots, 30$) was calculated. PW_j is constant across all households.

Step 2: Next, PW_j was corrected for each household based upon their consumption habits. In the questionnaire respondents were asked to provide their frequency of purchase for the products on an interval scale. To account for individual differences in consumption habits, PW_j was modified for each household. If product j was bought "about once every week", then U_{ij} (Usage for the j -th product for the i -th household) was obtained by multiplying PW_j by 6. The reason for choosing 6 was that a household purchasing product j each week will have six opportunities of using coupons during the study period. If the frequency of purchase response was "once in two weeks", then PW_j was multiplied by 3. For other responses PW_j was multiplied by the following numbers: "once in three weeks" = 2, "about once a month" = 1.5, and "infrequently" = 1. U_{ij} could range between 0 and 6.

Step 3: Since the proposed model is an aggregate model, and explains coupon usage for the entire basket, the final step involved in developing the usage opportunity index was to aggregate U_{ij} across the 30 products. However, coupon usage for more frequently purchased products would be high for almost everyone, while for products such as yogurt (which only 13.7% of the respondents buy each week) coupon usage would be much lower. Hence, the method proposed by Bawa and Shoemaker (1987) was used to make values comparable across products. A Coupon Usage Index (CUI) was constructed by counting the number of product classes in which household i 's coupon

usage opportunity was above median.

The computed index ranged from 0 to 30; a high value on the index would represent greater usage opportunity for the household. The mean value of CUI across households was 15.46 and its standard deviation was 5.48.

Coupon Availability (AVAIL): (ξ_8) Since 80% of the grocery coupons are distributed through the FSI's in newspapers, media readership habits will influence household coupon availability. Local newspapers generally have limited penetration in the rural areas; hence, a household residing in rural areas may have limited access to coupons. Coupon availability construct was, therefore, measured with a single item indicating the respondent's readership of the local newspaper.

Shopping Efficiency (EFF): (ξ_9) The final exogenous construct included in the proposed model pertains to the efficiency with which a household can process shopping related information. Past researchers (Bawa and Shoemaker, 1987; Narasimhan, 1984) have used education as a surrogate measure of the shopping efficiency. Both have reported that more educated people tend to use more coupons because of higher shopping efficiency. Efficiency was measured by the principal shopper's education which was recorded as a continuous variable.

RESULTS

LISREL results are shown in Figure 2. In the structural model, nine observed variables were used to indicate two endogenous constructs. Twenty-nine variables were used to indicate nine exogenous constructs. The specified model was general and did not contain any manipulations designed to accommodate operational difficulties.

Evaluation of the Measurement Model:

A two-tailed test, which suggests that a coefficient is significant if its t-value is two or more, for the results shown in Table 3 reveals that the measurement models for the dependent as well as independent variables have significant λ loadings. Furthermore, the ratio of the highest loading to the lowest loading for any latent construct is below two, thus implying that any indicator is at least

half as important as any other indicator for that particular latent construct. From the Φ matrix in the standardized LISREL solution, the discriminant validity of the constructs can be inferred. All values in the Φ matrix were less than 0.25 except those between VARSEEK and INNOVAT, and TIMECOST and EFF. These were 0.341 and 0.406 respectively.

Evaluation of the Structural Model:

Earlier η_1 and η_2 were described as two endogenous constructs representing Coupon Usage and Expected Benefits from Coupons respectively; and ξ_1 to ξ_9 were used to represent the nine exogenous constructs included in the model. Using these notations, results pertaining to the structural model are presented below (see Figure 2):

$$\begin{aligned}
 (1) \eta_1 &= 0.239 \eta_2 - 0.227 \xi_1 - 0.229 \xi_2 - 0.134 \xi_6 \\
 &\quad (3.78) \quad (-2.75) \quad (-2.86) \quad (-2.75) \\
 &\quad + 0.060 \xi_7 + 0.136 \xi_8 + 0.079 \xi_9 \\
 &\quad (1.23) \quad (2.81) \quad (1.46) \\
 (2) \eta_2 &= -0.118 \xi_5 + 0.468 \xi_4 + 0.192 \xi_3 \\
 &\quad (-1.58) \quad (6.10) \quad (2.75)
 \end{aligned}$$

The coefficients and their respective t-values in parentheses below them indicate that seven out of ten estimated parameters are significant. The overall goodness of fit index is 0.83, with the root mean square residual of 0.08. The adjusted goodness of fit index is 0.80. The chi-square value, with 623 degrees of freedom, is 1426.1 ($p < .001$). Based upon the chi-square, the proposed model would have to be rejected, i.e. it represents a lack of fit to the data. However, Bentler and Bonnett (1980) have suggested that the chi-square is sensitive to sample size and multinormality of the variables. It is also not a valid test statistic for the models that use correlation matrix as the input.

Another measure of the strength of the structural model is to assess the reliabilities of individual measures in multivariate setting. Werts, Linn, and Joreskog (1974) and Fornell and Larcker (1981) have suggested a formula to compute reliability ρ for each measure in a single factor model. Overall, except for INFOBEN (Information Benefit) all the measures were found to

have high ρ values. ρ values for all the indicators of exogenous constructs were also high. Conservative reliability ρ values (Fornell and Larcker, 1981) were also computed for each latent construct by summing up their λ values. Fornell and Larcker (1981) have suggested that if the conservative ρ is less than 0.50, the variance due to measurement error is larger than the variance captured by the construct. Consequently, the validity of the construct would be questionable. All constructs with multiple-items were found to have values greater than 0.50.

The final measure of the model's strength is the amount of variance explained for the endogenous constructs. The variance explained for the Expected Benefits from Coupons and the Extent of Coupon Usage is 16.1% and 15.6% respectively. The total coefficient of determination for the present system of structural equations is 25.3%.

DISCUSSION OF THE RESULTS

The central premise of the proposed model was that coupon usage is a rational activity and households weigh their costs and benefits before engaging in this practice. Empirical support was found for this belief.

Both the dimensions of costs, Opportunity Cost of Time and Effort Cost, have a negative effect on the extent of coupon usage. The maximum likelihood coefficients reported in Figure 2 for these two cost constructs (-.229 and -.227 for EFFCOST and TIMECOST respectively) suggest that by considering only the influence of time costs on coupon usage behavior, past studies may have underestimated their influence on couponing. In other words, there may be shoppers who do not use coupons despite low time costs because their perceived effort costs are high.

Perceived Benefits of Coupons (BENEFIT) also have a significant influence on the extent of coupon usage (CUSAGE). The BENEFIT construct was measured by the summated scores of five multiple-item scales representing financial, risk reduction, psychological, fun, and information benefits from coupons. As hypothesized, shoppers perceiving higher levels of benefits are more likely to use coupons ($\beta = 0.239$, $t = 3.78$).

In terms of situational variables, brand loyalty (LOYAL) has the hypothesized and significant negative effect on CUSAGE ($\gamma = -0.134$, $t = -2.75$). Many past studies have also reported the same relationship between brand loyalty and deal-proneness. The primary rationale for this negative relationship is that the consumers who repeatedly buy a given brand limit their exposure to coupons of the competing brands. Hence, the extent of their coupons usage is likely to be less than that of a non-loyal consumer.

The next situational variable, Coupon Usage Opportunity (USEOPP), was hypothesized to have a positive influence on CUSAGE. Empirically, the relationship was found to be positive ($\gamma = 0.060$) but it was not found to be significant ($t = 1.24$). A household's coupon usage opportunity was measured by the Coupon Usage Index (CUI) in which purchase frequency for the thirty products was used to capture the differences in their respective consumption habits. It is possible that the formula applied to correct the probabilities of finding coupons for each household's consumption habits may have been inappropriate. However, since past studies have used household size and their weekly grocery expenditure as surrogate measures of usage opportunity (McCann, 1974; Cotton and Babb, 1978), it is difficult for us to directly compare our findings with the published literature.

Coupon Availability (AVAIL) was the next construct hypothesized to have a direct influence on CUSAGE. Households that have higher than average availability of coupons were expected to exhibit heavier coupon usage. Empirically, this relationship was found to be in the expected direction ($\gamma = 0.136$) and significant ($t = 2.81$). Our findings are consistent with those of Bawa and Shoemaker (1987).

The final construct hypothesized to have a direct influence on CUSAGE is Household Shopping Efficiency (EFF). Shopping efficiency was measured by the principal shopper's reported education level. The estimated coefficient for this relationship was in the expected direction ($\gamma = 0.079$) but was not found to be statistically significant ($t = 1.46$). The result is not totally surprising given that past empirical studies have not found education to be a significant variable in

identifying deal-prone households. It seems that rather than using education as a surrogate measure of shopping efficiency, perhaps a more direct measure of shopping efficiency is needed.

Constructs hypothesized to have a direct influence on the Expected Benefits from Coupons (BENEFIT) include: Variety Seeking (VARSEEK), Product Innovativeness (INNOVAT), and Financial Pressure (FINPRES). Each of them was hypothesized to have a positive influence on the Expected Benefits from Coupons.

The maximum likelihood estimates indicate that variety-seeking had a negative effect on BENEFIT ($\gamma = -0.118$), i.e. it was found to have a 'wrong' sign. However, this effect was not significant ($t\text{-value} = -1.58$). Product Innovativeness (INNOVAT) had the strongest influence on BENEFIT ($\gamma = 0.468$, $t\text{-value} = 6.10$). The final construct to have a direct influence on the Expected Benefits is Financial Pressure (FINPRES). Households under greater financial strain were hypothesized to perceive greater benefits in coupons. The estimated coefficient had expected sign ($\gamma = 0.192$) and was statistically significant ($t\text{-value} = 2.75$).

Overall, the empirical results reported in this section suggest that household coupon usage behavior can be explained by the proposed cost-benefit model. Coefficients in the standardized solution indicate that none of the constructs dominated the effect of other constructs.

CONCLUSIONS

The purpose of this study was to develop and test a theoretical model of household coupon usage. The theoretical model reviewed the household decision to use coupons as being influenced by the cost of using coupons, benefits derived from the coupon redemption, and several situational variables. A panel of households was especially sequestered to provide data for model testing.

Throughout the investigation, particular attention was paid to ensure that the scales used to measure the various constructs hypothesized in the model were reliable. An elaborate approach involving qualitative and quantitative research was used to ensure that the constructs were customer based. Hence, where possible, in-depth interviews were conducted to provide the basic framework

for construct development. These were combined with evaluation of independent judges and actual field test of the constructs before use in the present investigation. The final measures are supported by theory and published empirical evidence.

The research has expanded the definition of benefits derived from coupon redemption. Instead of limiting benefits to purely financial reasons, this research broadened benefits to include psychological, fun, and risk reduction. Similarly, both the opportunity cost of time and effort cost of the shoppers were incorporated in the model to represent the economic and psychological costs of using coupons. These afford a more realistic assessment of a cost-benefit model.

The proposed framework makes several significant contributions. First, household costs and benefits associated with coupon usage are considered simultaneously in the model. Instead of assuming that coupon usage is exclusively a function of cost, the effect of both costs and benefits on coupon redemption was directly estimated. Variation in the household coupon usage may arise not only due to differences in their costs but also from differences in expected benefits. Two households with the same costs may not exhibit similar couponing behavior due to differences in the expected benefits from coupons.

Next, the proposed model permits a more comprehensive analysis of coupon usage behavior. Previous researchers have largely limited their analyses to either examination of the effect of cost or benefit on household coupon usage behavior. In the model presented here, several individual and situational variables which have been found to influence household coupon usage behavior were incorporated. This has permitted a richer profile of coupon prone households.

Finally, the unit of analysis in this investigation was at the grocery basket level. Past researchers frequently have limited their analysis to a single product category at a time. This practice has forced researchers to make a restrictive assumption that there is only one couponed product which has been shown not to hold (Narasimhan, 1984). Winn (1972, p. 144) has also shown that different demographic, purchase, and psychological variables are significant for different product categories, thus indicating that deals have differential effectiveness depending upon product category.

Our analysis suggests that household coupon usage behavior can be explained by the proposed cost-benefit framework. Coefficients for nine out of ten hypothesized linkages were found to be in the expected direction while seven of them were also statistically significant. Households carefully consider the cost of using coupons with the benefits derived from them before deciding whether to redeem them. The study results are useful for the marketing managers. The traditional industry view that grocery coupons are used for monetary savings alone seems to be too narrow. It is likely that the effectiveness of coupons can be enhanced by better targeting them towards those households that receive psychological as well as monetary benefits from coupon use.

Table 1

List of Chosen Products

Grocery Edibles:

Cold/Hot Breakfast Cereals
Mayonnaise & Mayo Type Dressing
Ketchup
Salad or Cooking Oil
Peanut Butter
Jams, Jellies & Preserves
Canned Tuna
Dry Package Pasta
Tomato Sauce
Soda/Pop
Spaghetti Sauce
Canned Soups
Ground Coffee

Grocery Non-edibles:

Bar Soap
Laundry Detergent
Aluminum Foil
Paper Towels
Dish washing Liquid
Facial Tissues
Garbage Bags
Plastic Kitchen Wrap
Paper Napkins
Toilet Paper
Fabric Softeners

Frozen/Dairy Foods:

Yogurt
Frozen Vegetables
Cheeses
Margarine
Frozen Prepared Dishes
Frozen Orange Juice

Table 2
Sample Items and Reliability Scores for Various Constructs

Constructs	Dimensions	# of Items	Sample Item	Cronbach Alpha
Extent of Coupon Usage (CUSAGE)		4	Average weekly coupon savings	0.81
Expected Benefits from Coupons (BENEFIT)	Monetary Savings (FINBEN)	3	Coupons enable me to buy more groceries	0.78
	Risk Reduction (RISKBEN)	5	Coupons reduce the risk of trying unfamiliar products	0.87
	Psychological Benefit (PSYBEN)	11	I get personal satisfaction from using coupons	0.96
	Fun Benefit (FUNBEN)	4	Coupon use is a fun thing to do	0.88
	Information Benefit (INFOBEN)	4	Coupons give me wider exposure to new products	0.80
Opportunity Cost of Time (TIMECOST)		2	Dollar value of time spent in grocery shopping	0.73
Effort Cost (EFFCOST)		6	Coupons are too difficult to use	0.87
Financial Pressure (FINPRES)		7	I often feel financially pressured	0.90
Product Innovativeness (INNOVAT)		6	I enjoy purchasing new products	0.87
Variety Seeking (VARSEEK)		4	I sometimes change brands because I grow tired of my regular brand	0.86
Brand Loyalty (LOYAL)		1	Percentage of transaction involving "usually bought" brand	-
Coupon Usage Opportunity (USEOPP)		1	Coupon Usage Index	-
Coupon Availability (AVAIL)		1	Media Readership	-
Shopping Efficiency (EFF)		1	Education Level	-

Table 3
Evaluation of the Measurement Model

Construct	Items	ML Estimate	T Value	Construct	Items	ML Estimate	T Value
CUSAGE	Y6	1.000	0.00	BENEFIT	Y1	1.000	0.00
	Y7	0.967	37.43		Y2	0.850	13.74
	Y8	0.846	23.86		Y3	1.093	18.77
	Y9	0.908	29.38		Y4	0.988	16.66
					Y5	0.769	12.16
TIMECOST	X25	1.000	0.00	EFFCOST	X19	1.000	0.00
	X26	1.266	8.57		X20	1.103	11.98
					X21	1.110	12.04
					X22	0.989	10.92
					X23	1.030	11.31
					X24	1.145	12.34
FINPRES	X11	1.000	0.00	INNOVAT	X5	1.000	0.00
	X12	1.023	11.26		X6	1.194	14.20
	X13	1.306	13.76		X7	1.053	12.66
	X14	1.332	13.96		X8	1.261	14.83
	X15	1.081	11.80		X9	0.895	10.87
	X16	1.162	12.54		X10	0.843	10.26
	X17	1.067	11.67				
VARSEEK	X1	1.000	0.00	LOYAL	X18	1.000	0.00
	X2	1.167	12.58				
	X3	1.300	13.51				
	X4	1.181	12.71				
USEOPP	X27	1.000	0.00	AVAIL	X28	1.000	0.00
EFF	X29	1.000	0.00				

Note: The loading of one variable for each construct is set to unity for identification purposes. The loadings of the other indicators of that construct, therefore, are relative to that of the fixed variable. This is true of both the endogenous constructs and five exogenous constructs. The loadings for four measures - X18, X27, X28, and X29 - are set to unity because all of them are single indicators of the latent constructs of "Brand Loyalty", "Usage Opportunity", "Coupon Availability", and "Efficiency" respectively.

Figure 1
A Model of Household Coupon Usage Behavior

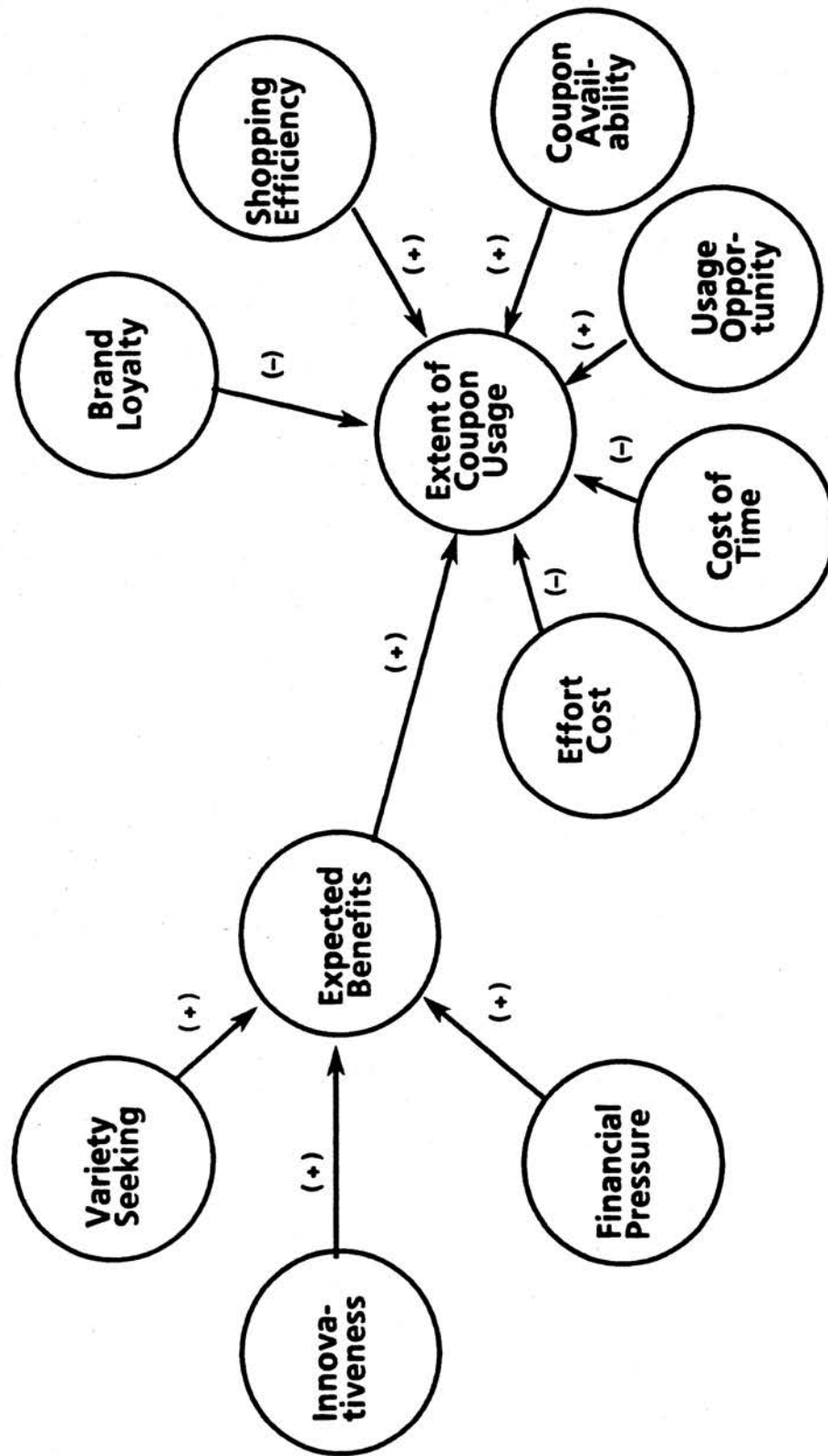
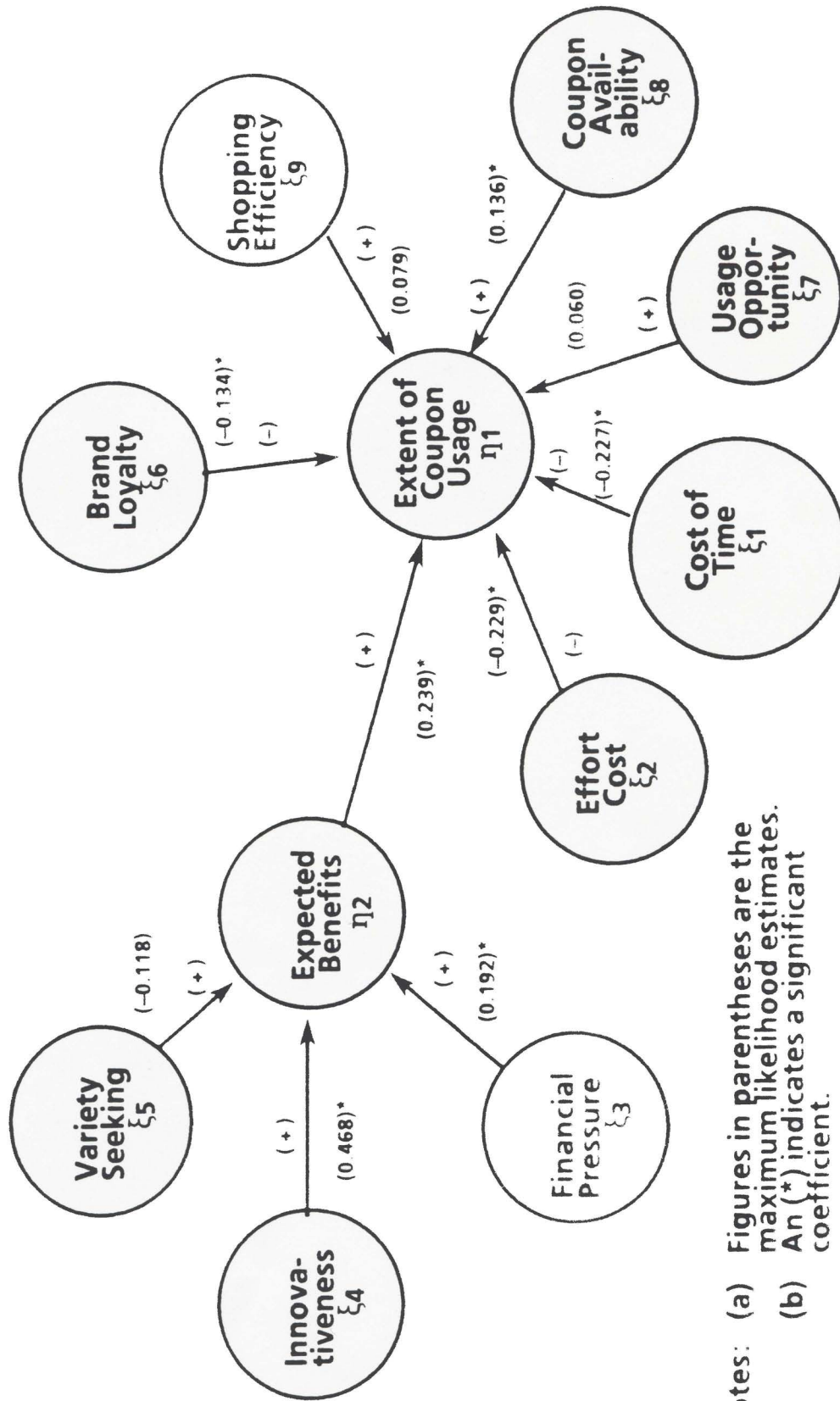


Figure 2
A Model of Household Coupon Usage Behavior
(Empirical Results)



Notes: (a) Figures in parentheses are the maximum likelihood estimates.
(b) An (*) indicates a significant coefficient.

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Appendix

Product Selection Process

Step 1: The first step in the product selection process was to divide all the branded and packaged products one can buy at grocery stores into four broad categories, viz. grocery edibles, grocery non-edibles, frozen/dairy foods and health and beauty aids (HBA). Meats and vegetables were left out as they have no manufacturer couponing. From these four groups, HBA was dropped from further consideration because this category commands a different market. Products were therefore identified for selection within each of the remaining three categories.

Step 2: The next step was to consider the percentage of shoppers that buy different grocery items nationwide. These data were obtained from the September 1988 issue of the Progressive Grocer. Only products purchased by a majority of the shopping populace, i.e. more than 50%, were selected. The reason for including only widely used products was to get purchase data from as many panel members as possible. Since only thirty products were going to be included in the diary, they had to be the ones that are bought by a majority of the households. About sixty products were identified at this stage.

Step 3: Frequency of purchase of these sixty products was the second criterion applied to eliminate some more products. This was done to obtain the maximum number of transactions from the panel members. Only products bought at least once during a typical grocery cycle (usually 4-6 weeks) were included. Since it was difficult to get the frequency of purchase information from any published sources, the list of these sixty products was shown to six "expert" shoppers. These experts were principal shoppers in their respective households, and shopped regularly spending large amounts per store visit. The practical experience these individuals commanded was substantial. They were asked to rate their perceptions of the frequency of purchase of these products by an average shopper on a Likert type scale. They were also told not to give only their own purchase frequencies for the products listed. Instead, we wanted information about the overall market. If three of the six "experts" stated that a product would not be bought at least once every month, it was eliminated from the list. About a dozen products were eliminated at this stage.

Step 4: The extent of couponing was the last yardstick applied in the product selection process. Again, this information could not be obtained from any published sources. Hence a two-step method was devised to get a reliable estimate of the extent of couponing. First, the six "experts" referred to earlier were asked to indicate their perceptions of the extent of coupon availability for all the remaining products, based on their "ears-to-the-ground" grocery shopping experience. A five point scale was employed to get their perceptions. Since these individuals were heavy coupon users, they were able to give reliable information. While care was taken in instructing them to give their perceptions even for the products they never buy, later enquiry revealed that all of them were regular purchasers of all the listed products. A product was eliminated if three or more respondents thought that a product was almost never couponed. Secondly, a frequency distribution was constructed for the products for which coupons were distributed through FSI's in the Sunday edition of the local newspaper over a four-month period. This gave a fairly good idea of what products are usually couponed. A comparison of the coupon availability numbers obtained via the above two steps gave consistent results. About eight more products were eliminated in this process, bringing the number down to 40.

Step 5: To independently validate this list of products, nine judges were recruited to provide lists of 40 products they thought would satisfy each of the above three criteria (products should be bought by a majority of the population, they should be bought frequently, and they should be couponed). The list that was generated above was not shown to them. Their responses were then tabulated, and were compared to the previous list. If less than two judges had included a product in their lists, it was eliminated.